

ABSTRACT

A method for quantitating cellular proteins in tissue, by means of a cell imaging densitometer in conjunction with immunohistological staining and a reference standard, is provided. Unlike prior art methods, which provide ordinal measures of relative amounts of protein among different cells, the method enables the quantitation of antigenic proteins in terms of absolute mass of protein/tumor or protein/patient, molecules of protein per cell, and volume or fraction of a tissue sample expressing the protein of interest. The method is useful for research purposes in the study of protein expression, and is shown to improve the accuracy of clinical histopathological analysis of tumor tissue sections for diagnosis and prognosis. The method is expected to be useful for prescribing *in situ* treatment dosages. The demonstrated resulting improvement in the correlation between tissue levels and blood levels of tumor-associated proteins should facilitate minimally-invasive monitoring of cancer progression and therapeutic response.